

In the Claims

Please replace the claims with the following clean version of the entire set of pending claims, in accordance with 37 C.F.R. § 1.121(c)(1)(i).

A marked up version showing amendments to any claims being changed is provided in one or more accompanying pages separate from this amendment in accordance with 37 C.F.R. § 1.121(c)(1)(ii).

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1. (Amended) A wafer processing apparatus comprising:
(12)
a wafer holder adapted to receive a wafer having an electrical coupling and to expose the wafer to a chemical processing environment to chemically process the wafer, the wafer holder including an electrical coupling configured to electrically couple with the electrical coupling of the wafer and communicate signals between the wafer and the wafer holder.

2. (Amended) The wafer processing apparatus according to claim 1 further comprising a data gathering device coupled with the electrical coupling of the wafer holder and configured to receive the signals.

FIG 9, 10
3. (Amended) The wafer processing apparatus according to claim 2 further comprising a contact plate configured to communicate the signal intermediate the wafer holder and the data gathering device.

4. (Amended) The wafer processing apparatus according to claim 1 wherein the wafer holder includes a first surface, a second surface, and an electrical interconnect configured to electrically couple the first surface and the second surface.

5. (Amended) The wafer processing apparatus according to claim 4 wherein the first surface of the wafer holder is configured to face a received wafer and the second surface is configured to face a chuck.

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6. (Amended) The wafer processing apparatus according to claim 1 wherein the wafer holder includes a plurality of electrical couplings adapted to couple with a plurality of electrical couplings of the wafer.

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7. (Amended) The wafer processing apparatus according to claim 1 wherein the wafer holder comprises a chuck.

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8. (Amended) The wafer processing apparatus according to claim 1 wherein the wafer holder comprises a chuck configured to receive ^{one} a calibration wafer and a production } wafer.

D3 9. (Amended) The wafer processing apparatus according to claim 8 wherein the wafer holder [and the calibration wafer] include vacuum chambers adapted to receive a vacuum to couple the calibration wafer and the production wafer with the chuck.

FIG 3 10. (Amended) The wafer processing apparatus according to claim 1 wherein the wafer holder comprises an intermediate member adapted to couple with a chuck.

C1 unit. 11. (Amended) The wafer processing apparatus according to claim 1 wherein the wafer holder includes a vacuum chamber adapted to receive a vacuum to couple a received wafer with the wafer holder.

12. (Amended) The wafer processing apparatus according to claim 1 wherein the electrical interconnect comprises a conductive column configured to extend outward from plural surfaces of the wafer holder. (12)

13. (Amended) The wafer processing apparatus according to claim 12 further comprising a contact plate including circuitry configured to provide electrical connection with the conductive column. (90)

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18. (Amended) A wafer processing apparatus comprising:

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a wafer holder adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer, the wafer holder having circuitry configured to communicate a process signal received from a received wafer and the process signal containing information regarding processing of the received wafer.

19. (Amended) A wafer processing apparatus comprising:

24 a chuck including a surface, ⁽⁴⁵⁾an electrical coupling adjacent the surface, and ^{(13)?}electrical interconnect configured to connect with the electrical coupling of the chuck and conduct a signal within the chuck;

an intermediate member adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer, the intermediate member having a first surface and a second surface and the intermediate member including:

62 66 an electrical coupling adjacent the first surface and configured to couple with the electrical coupling of the chuck;

65 an electrical coupling adjacent the second surface; and

an electrical interconnect configured to connect the electrical coupling adjacent the first surface and the electrical coupling adjacent the second surface; and

a wafer configured to couple with the second surface of the intermediate member, the wafer including a sensor and an electrical coupling configured to provide electrical connection of the sensor with the electrical coupling of the second surface of the intermediate member.

20. (Amended) The wafer processing apparatus according to claim 19 further comprising a data gathering device coupled with the electrical coupling of the chuck and configured to receive the signal.

21. (Amended) The wafer processing apparatus according to claim 20 further comprising a contact plate configured to communicate the signal intermediate the chuck and the data gathering device.

22. (Amended) The wafer processing apparatus according to claim 19 wherein the sensor comprises a resistance temperature device.

23. (Amended) The wafer processing apparatus according to claim 19 wherein the wafer comprises a calibration wafer.

24. (Amended) The wafer processing apparatus according to claim 19 wherein the electrical interconnect comprises a conductive column configured to extend outward from plural surfaces of the chuck.

25. (Amended) The wafer processing apparatus according to claim 24 further comprising a contact plate including circuitry configured to provide electrical connection with electrical couplings of the chuck.

26. (Amended) A wafer processing apparatus comprising:

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a chuck including a surface, a plurality of electrical couplings adjacent the surface, and a plurality of electrical interconnects⁽¹³⁾ configured to connect with respective electrical couplings of the chuck and conduct signals within the chuck;

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an intermediate member adapted to receive a wafer and to expose the wafer to a chemical processing environment to chemically process the wafer, the intermediate member having a first surface and a second surface and the intermediate member including:

a plurality of electrical couplings adjacent the first surface and configured to couple with respective electrical couplings of the chuck;

a plurality of electrical couplings adjacent the second surface; and

a plurality of electrical interconnects configured to electrically connect the electrical couplings of the first surface with respective electrical couplings of the second surface;

a calibration wafer configured to couple with the second surface of the intermediate member, the calibration wafer including a plurality of resistance temperature devices configured to generate process signals, and a plurality of electrical connections configured to electrically connect the resistance temperature devices with respective electrical couplings of the second surface of the intermediate member; and

a data gathering device coupled with the electrical interconnects of the chuck and configured to receive the process signals from the resistance temperature devices through the intermediate member and the chuck.

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53. (New) An electronic device workpiece processing apparatus comprising:

(60) a workpiece holder adapted to receive an electronic device workpiece (20) having an electrical coupling, the workpiece holder including an electrical coupling (20) configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder, wherein the workpiece holder includes a first surface configured to face a received electronic device workpiece, a second surface configured to face a chuck, and ⁽⁴⁰⁾ an electrical ^{an electrical coupling of the workpiece holder} interconnect ^{has} configured to electrically couple the first surface and the second surface.

54. (New) An electronic device workpiece processing apparatus comprising:

a workpiece holder adapted to receive an electronic device workpiece having an electrical coupling, the workpiece holder including an electrical coupling configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder, wherein the workpiece holder ^{is of} comprises a chuck configured to receive a calibration workpiece and a production workpiece.

55. (New) The electronic device workpiece processing apparatus according to claim 54 ⁽⁴⁹⁾ wherein the workpiece holder and the calibration workpiece include vacuum chambers adapted to receive a vacuum to couple the calibration workpiece and the production workpiece with the chuck.

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56. (New) An electronic device workpiece processing apparatus comprising:

a workpiece holder adapted to receive an electronic device workpiece having an electrical coupling, the workpiece holder including an electrical coupling configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder, wherein the workpiece holder comprises an ²intermediate member adapted to couple with a chuck.

57. (New) An electronic device workpiece processing apparatus comprising:

a workpiece holder adapted to receive an electronic device workpiece having an electrical coupling, the workpiece holder including an electrical coupling configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder, wherein the workpiece holder includes a vacuum chamber adapted to receive a vacuum to couple a received electronic device workpiece with the workpiece holder.

58. (New) An electronic device workpiece processing apparatus comprising:

a workpiece holder adapted to receive an electronic device workpiece having an electrical coupling, the workpiece holder including an electrical coupling configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder, wherein the workpiece holder comprises a conductive column configured to extend outward from plural surfaces of the workpiece holder; and

a contact plate including circuitry configured to provide electrical connection with the conductive column.

59. (New) An electronic device workpiece processing apparatus comprising:

a chuck including a surface, an electrical coupling adjacent the surface, and electrical interconnect configured to connect with the electrical coupling of the chuck and conduct a signal within the chuck;

an intermediate member having a first surface and a second surface and the intermediate member including:

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an electrical coupling adjacent the first surface and configured to couple with the electrical coupling of the chuck;

an electrical coupling adjacent the second surface; and

an electrical interconnect configured to connect the electrical coupling adjacent the first surface and the electrical coupling adjacent the second surface;

an electronic device workpiece configured to couple with the second surface of the intermediate member, the electronic device workpiece including a sensor and an electrical coupling configured to provide electrical connection of the sensor with the electrical coupling of the second surface of the intermediate member;

a data gathering device coupled with the electrical coupling of the chuck and configured to receive the signal; and

a contact plate configured to communicate the signal intermediate the chuck and the data gathering device.

60. (New) An electronic device workpiece processing apparatus comprising:

a chuck including a surface, an electrical coupling adjacent the surface, and electrical interconnect configured to connect with the electrical coupling of the chuck and conduct a signal within the chuck;

an intermediate member having a first surface and a second surface and the intermediate member including:

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an electrical coupling adjacent the first surface and configured to couple with the electrical coupling of the chuck;

an electrical coupling adjacent the second surface; and

an electrical interconnect configured to connect the electrical coupling adjacent the first surface and the electrical coupling adjacent the second surface; and

an electronic device workpiece configured to couple with the second surface of the intermediate member, the electronic device workpiece including a sensor comprising a resistance temperature device, and an electrical coupling configured to provide electrical connection of the sensor with the electrical coupling of the second surface of the intermediate member.

61. (New) An electronic device workpiece processing apparatus comprising:

a chuck including a surface, an electrical coupling adjacent the surface, and electrical interconnect configured to connect with the electrical coupling of the chuck and conduct a signal within the chuck;

a contact plate including circuitry configured to provide electrical connection with the electrical coupling of the chuck;

an intermediate member having a first surface and a second surface and the intermediate member including:

an electrical coupling adjacent the first surface and configured to couple with the electrical coupling of the chuck;

an electrical coupling adjacent the second surface; and

an electrical interconnect configured to connect the electrical coupling adjacent the first surface and the electrical coupling adjacent the second surface, wherein the electrical interconnect comprises a conductive column configured to extend outward from plural surfaces of the chuck; and

an electronic device workpiece configured to couple with the second surface of the intermediate member, the electronic device workpiece including a sensor and an electrical coupling configured to provide electrical connection of the sensor with the electrical coupling of the second surface of the intermediate member.

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